

## **Indoor Distribution Test Report**

# **Spectrum Lighting Inc.**

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## **Spectrum Lighting Photometric Lab**

### **Luminaire**

AS01RDF NC 935 004 DL FL MW xx  
Nom 1" round recessed downlight

### **Test Number**

SP-01012\_M-4L

### **Test Date**

10/29/2019

The results contained in this report pertain only to this IES file.

## Summary of Results

### Power

Input Watts	6.3 W
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### Lumen Output

Output Lumens	271
Efficacy	43 lm/W

### Luminous Dimensions

0° - 180° Size	-0.08
90° - 270° Size	-0.08
Height	0

### Spacing Criterion

Two luminaires, plane 0°	0.63
Two luminaires, plane 90°	0.63
Four luminaires	0.63

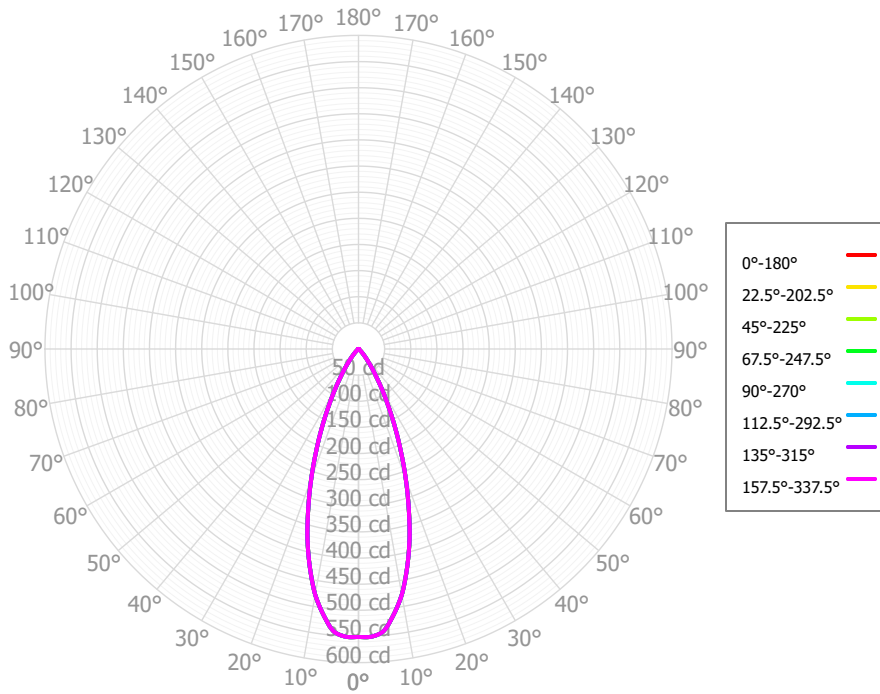
### Full Beam Angle

0° - 180°	39°
90° - 270°	39°

## IES File Header Contents

Keyword	Value
TEST	SP-01012_M-4L
TESTLAB	Spectrum Lighting Photometric Lab, VLS-245-981
MANUFAC	Spectrum Lighting
TESTDATE	10/29/2019
ISSUEDATE	12/29/2021
LUMCAT	AS01RDF NC 935 004 DL FL MW xx
LUMINAIRE	Nom 1" round recessed downlight
OTHER	Beam angle: 38.9 degrees
LAMP	N/A
LAMPCAT	N/A, CRI: 90 min
OTHER	CCT Multipliers: 927 x 0.96, 930 x 0.99, 940 x 1.02
OTHER	Total luminaire wattages is approximate
OTHER	This report prepared by Spectrum Lighting, scaled from 7L

### Candela Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% Fixture	Zone	Lumens	% Fixture
0.00° - 10.00°	50.12	18.50%	90.00° - 100.00°	0.09	0.03%
10.00° - 20.00°	102.35	37.78%	100.00° - 110.00°	0.00	0.00%
20.00° - 30.00°	75.76	27.96%	100.00° - 120.00°	0.00	0.00%
30.00° - 40.00°	29.77	10.99%	120.00° - 130.00°	0.00	0.00%
40.00° - 50.00°	7.48	2.76%	130.00° - 140.00°	0.00	0.00%
50.00° - 60.00°	2.23	0.82%	140.00° - 150.00°	0.00	0.00%
60.00° - 70.00°	1.36	0.50%	150.00° - 160.00°	0.00	0.00%
70.00° - 80.00°	0.98	0.36%	160.00° - 170.00°	0.00	0.00%
80.00° - 90.00°	0.77	0.28%	170.00° - 180.00°	0.00	0.00%
0.00° - 90.00°	270.82	99.97%	0.00° - 180.00°	270.91	100.00%

### Candela Distribution

	0.00°	22.50°	45.00°	67.50°	90.00°	112.50°	135.00°	157.50°	180.00°	202.50°	225.00°	247.50°	270.00°	292.50°	315.00°	337.50°	360.00°
0.00°	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16
2.50°	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16	551.16
5.00°	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69	542.69
7.50°	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40	513.40
10.00°	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45	477.45
12.50°	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31	429.31
15.00°	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23	377.23
17.50°	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70	319.70
20.00°	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48	264.48
22.50°	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76	211.76
25.00°	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33	165.33
27.50°	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16	124.16
30.00°	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53	91.53
32.50°	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38	64.38
35.00°	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35	45.35
37.50°	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28	30.28
40.00°	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79	20.79
42.50°	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27	13.27
45.00°	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89	8.89
47.50°	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28	5.28
50.00°	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85	3.85
52.50°	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75	2.75
55.00°	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38	2.38
57.50°	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07	2.07
60.00°	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80
62.50°	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53	1.53
65.00°	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35
67.50°	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18	1.18
70.00°	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
72.50°	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
75.00°	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
77.50°	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
80.00°	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
82.50°	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73
85.00°	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67	0.67
87.50°	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66	0.66
90.00°	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
92.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
97.50°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00°	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

### Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

<b>RCR</b>	<b>pfc</b>	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%	0%
	<b>pcc</b>	80%	80%	80%	80%	70%	70%	70%	70%	50%	50%	50%	30%	30%	30%	10%	10%	0%
	<b>pw</b>	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	30%
	<b>0</b>	322	322	322	322	315	315	315	315	301	301	301	288	288	288	276	276	271
	<b>1</b>	309	302	296	290	302	296	290	285	285	281	277	275	272	268	266	263	258
	<b>2</b>	296	284	274	266	290	279	270	263	270	263	257	262	257	251	255	250	245
	<b>3</b>	283	268	256	246	278	264	253	244	257	248	240	250	243	236	244	238	234
	<b>4</b>	271	253	240	230	267	250	238	228	244	234	226	239	230	223	234	227	223
	<b>5</b>	260	240	226	216	256	238	225	215	233	222	213	229	219	211	225	216	212
	<b>6</b>	249	228	214	204	246	226	213	203	222	211	202	219	208	201	215	206	203
	<b>7</b>	239	218	203	193	236	216	202	193	213	201	192	210	199	191	207	197	194
	<b>8</b>	230	208	194	184	227	206	193	183	203	191	183	201	190	182	198	189	186
	<b>9</b>	221	199	185	175	219	197	184	175	195	183	174	193	182	174	191	181	178
	<b>10</b>	213	190	177	168	211	189	176	167	187	175	167	185	174	166	183	173	171

### Cone of Light

Mtg Height	Light Level	Beam Diameter
5.5 ft	18.2 fc	3.9 ft
6.5 ft	13.0 fc	4.6 ft
7.5 ft	9.8 fc	5.3 ft
8.0 ft	8.6 fc	5.7 ft
10.0 ft	5.5 fc	7.1 ft
12.0 ft	3.8 fc	8.5 ft
14.0 ft	2.8 fc	9.9 ft
16.0 ft	2.2 fc	11.3 ft
20.0 ft	1.4 fc	14.2 ft
24.0 ft	1.0 fc	17.0 ft
28.0 ft	0.7 fc	19.8 ft

### Average Luminaire Luminance [cd/m<sup>2</sup>]

	0.00°	45.00°	90.00°
<b>0.00°</b>	1180253	1180253	1180253
<b>45.00°</b>	26914	26914	26914
<b>55.00°</b>	8893	8893	8893
<b>65.00°</b>	6842	6842	6842
<b>75.00°</b>	7488	7488	7488
<b>85.00°</b>	16528	16528	16528

### UGR CIE 190:2010

<b>Ceiling reflectance</b>		<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>	<b>0.7</b>	<b>0.7</b>	<b>0.5</b>	<b>0.5</b>	<b>0.3</b>
<b>Wall reflectance</b>		<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.5</b>	<b>0.3</b>	<b>0.3</b>
<b>Plane reflectance</b>		<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>	<b>0.2</b>
<b>Room dimensions</b>		<b>Viewed crosswise</b>					<b>Viewed endwise</b>				
<b>2H</b>	<b>2H</b>	8.8	9.8	9.2	10.1	10.4	8.8	9.8	9.2	10.1	10.4
	<b>3H</b>	10.2	11.1	10.6	11.4	11.8	10.2	11.1	10.6	11.4	11.8
	<b>4H</b>	11.0	11.8	11.4	12.1	12.5	11.0	11.8	11.4	12.1	12.5
	<b>6H</b>	12.1	12.8	12.5	13.1	13.5	12.1	12.8	12.5	13.1	13.5
	<b>8H</b>	12.6	13.3	13.0	13.7	14.1	12.6	13.3	13.0	13.7	14.1
	<b>12H</b>	13.2	13.9	13.7	14.3	14.7	13.2	13.9	13.7	14.3	14.7
<b>4H</b>	<b>2H</b>	9.2	9.9	9.6	10.3	10.7	9.2	9.9	9.6	10.3	10.7
	<b>3H</b>	10.9	11.5	11.3	11.9	12.3	10.9	11.5	11.3	11.9	12.3
	<b>4H</b>	11.9	12.4	12.3	12.8	13.3	11.9	12.4	12.3	12.8	13.3
	<b>6H</b>	13.2	13.6	13.6	14.1	14.6	13.2	13.6	13.6	14.1	14.6
	<b>8H</b>	13.8	14.3	14.3	14.7	15.2	13.8	14.3	14.3	14.7	15.2
	<b>12H</b>	14.6	15.0	15.1	15.5	16.0	14.6	15.0	15.1	15.5	16.0
<b>8H</b>	<b>4H</b>	12.2	12.7	12.7	13.1	13.6	12.2	12.7	12.7	13.1	13.6
	<b>6H</b>	13.8	14.2	14.3	14.7	15.2	13.8	14.2	14.3	14.7	15.2
	<b>8H</b>	14.7	15.0	15.2	15.5	16.0	14.7	15.0	15.2	15.5	16.0
	<b>12H</b>	15.7	16.0	16.2	16.5	17.0	15.7	16.0	16.2	16.5	17.0
<b>12H</b>	<b>4H</b>	12.3	12.7	12.8	13.2	13.7	12.3	12.7	12.8	13.2	13.7
	<b>6H</b>	14.0	14.3	14.5	14.8	15.3	14.0	14.3	14.5	14.8	15.3
	<b>8H</b>	15.0	15.2	15.5	15.7	16.3	15.0	15.2	15.5	15.7	16.3

Corrected UGR values based on total output energy  
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0